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3. Panicle small or large, branches long: spikelets scattered or glomerate.

PP. gymnocarpon, hians, barbinode, laxum.

4. Panicle larger, branches subdivided: spikelets pedicelled.

PP. latifolium, clandestinum, viscidum, scabriusculum, commutatum, Nealleyi, microcarpon and var.

5. Panicle effuse, branches capillary and much subdivided.

PP. capillare, proliferum, Hallii, autumnale, Buckleyi, miliacea, verrucosum.

Tall grasses, with ample and diffuse panicle.

PP. anceps, agrostoides, virgatum, amarum, maximum, bulbosum, avenaceum, Havardii.

7. Frutescent: spikelets large and turgid; empty glumes loose.

P. divaricatum Linn.

8. Panicle diffuse: spikelets large; the glumes very silky-villose.

P. Urvilleanum Kth.—DR. GEORGE VASEY, *Washington, D. C.*

EDITORIAL.

WHAT are the duties of the new experiment stations established at the state agricultural colleges by the national government, and recently made operative by congressional appropriation? The stations have two functions, as laid down by the law—"acquiring and diffusing" knowledge—and it is well to notice the significant order in which they are mentioned. The second section of the act specifies in what lines acquisition may be made, and it is our present purpose only to call attention to that part which relates to the study of plants. "It shall be the object and duty of said experiment stations," so the law reads, "to conduct original researches or verify experiments on the physiology of plants and animals, the diseases to which they are severally subject, with remedies for the same," etc. It can not be wholly accidental that the important subject of vegetable physiology, a subject in which barely a trace of experimental work has yet been done in this country, was placed first in the enumeration. Then comes pathology of plants, in which some progress has been made by American students, both being coupled with similar investigations for animals. Few indications more clearly show the rapid advancement of botany in public estimation than this prominence of the subject in a legislative movement for the improvement of a great industry. Indeed, the law gives more latitude for botanical work than appears at first sight. Of the ten specifically mentioned subjects for investigation, nine give the opportunity for a well educated botanist of the modern school to do good and lasting work, the only non-botanical subject being "the analysis of soils and water," although if hard driven

we might insist that nothing prevents interpreting this to mean not only chemical but biological analysis. Thus, the law permits and makes prominent mention of the study of plants in their manifold relations to economic problems, and it remains to be seen if those who carry out its provisions will act as wisely in this regard as the framers of the law have done. No station can give facilities for the pursuance of every line of work contemplated by the law, and those that do a few things well are likely to work more good for the country and bring more credit to themselves than those that scatter their resources among many subjects. Of the things to be done well, the broad and fertile fields of vegetable physiology, pathology and bacteriology offer great expectations of economic and scientific gain to the stations and men who enter them fully equipped for research, and through them to the people at large.

OPEN LETTERS.

Typha.

I am surprised that Mr. Morong, in his interesting article on *Typha*, in the *Bull. Bot. Club*, p. 4, 1888, does not mention, under the heading of *uses*, the use of the leaves of these plants in cooperage. In some localities the collecting of these leaves is quite an industry. They are collected, dried in the shade, bound into bundles, and sent to market. When used they are split in halves through the broad diameter, and placed between the joints of headings, and of the staves near the headings. I find, on inquiry, that this is the almost universal method for making tight-work, not only in this country but also in Europe. J. SCHNECK.

Mt. Carmel, Ill.

An odd fuchsia.

A malformed fuchsia which came under my notice a few days ago has five stamens, two of which have become adnate to the pistil. The petals are purple, five in number, and apparently normal. The calyx consists of five sepals, and what is the limb in the normal flower has partially grown together. Fast to this limb, by one edge, have grown two bodies, apparently bracts. In each one the side which adheres is red, like the calyx, while the free half is green and sparingly serrate. At first I thought these bodies were sepals, but as they could be traced to the pedicel of the flower by a prominent line or ridge, I concluded them to be bracts.

W. A. PUCHNER.

Chicago, Ill.

Fragrance of flowers.

In regard to the effects of the fragrance of certain flowers upon certain people, of which I have observed several communications in the *GAZETTE*, I have never been able to sit in a room where lilacs form a bouquet, nor could I ever examine the flowers of the common milkweed, which grows so plentifully along the country roadsides. I have tried